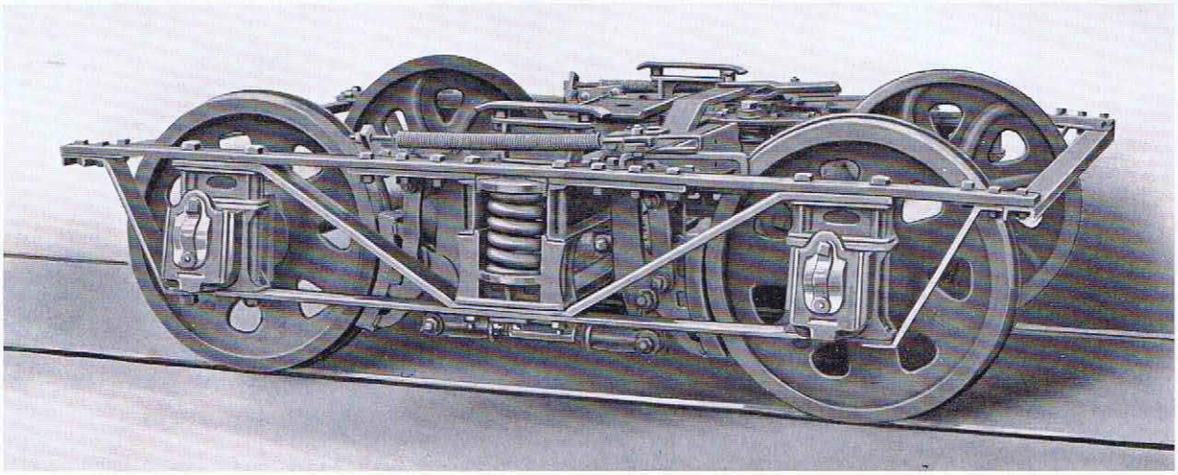
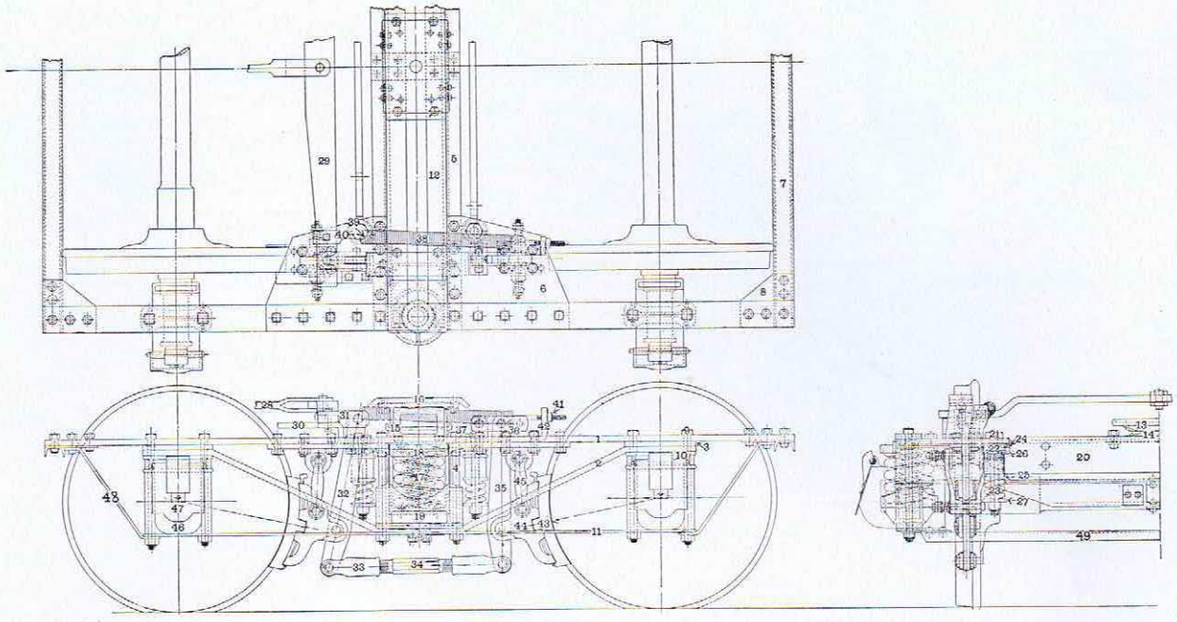


BRILL No. 50-E TRUCK

THE Diamond arch-bar type of M. C. B. truck has proved itself, during the many years of its extensive use in both slow and fast freight service on steam railroads, so successful and reliable, that the similar Brill No. 50-E truck was designed to assume the same vital position in electric interurban freight and express service and also under moderately powerful electric locomotives.

The truck consists of two truss-form side frames, the ends of each being tied across by end frames to reinforce the transoms in retaining squareness. Each side-frame end rests indirectly on the tops of the journal boxes, the under sides of which are held to the horizontal by a tie bar that connects them and that is secured to the lower face of the tension member of the truss near its center. The tie bar is reinforced by a pedestal brace that extends from the bottom of the journal box to the nearer side-frame corner. The position of the transoms, and their resistance to tortion, in the truck, is maintained by the use of unusually large and stiff gusset plates, bolted to the transoms and the side-frame compression members. The weight of the car body is transferred to the wheels through the bolster, having the usual center plate and side bearings. Spiral springs are seated in a casting, the extended sides of which, together with the imposed transom ends, form the arch bar columns or bolster guides, through which two continuous bolts run. Spring cap castings are fitted to the ends of the bolster, which is built up of two channels with their webs in a vertical plane. The large diameter coil springs, that are placed between the spring seat and spring cap, cushion any side sway occasioned by the slight play allowed for lateral bolster movement in the transom guides, which are placed on the longitudinal truck center line. In order to give proper height to the side truss and also to make the supports for the motors and brake hangers as direct and free from complication as possible, a frame seat casting is interposed between the top of the journal box and the end of the side truss. The gusset plates that were mentioned as reinforcing the transoms perform the additional work of supporting the spring-balanced motor suspension bar and the lugs to which the Brill Half-Ball brake hangers are attached. The use of these hangers and a radius bar permits the elimination of brake beams, and secures clearance for the motors.

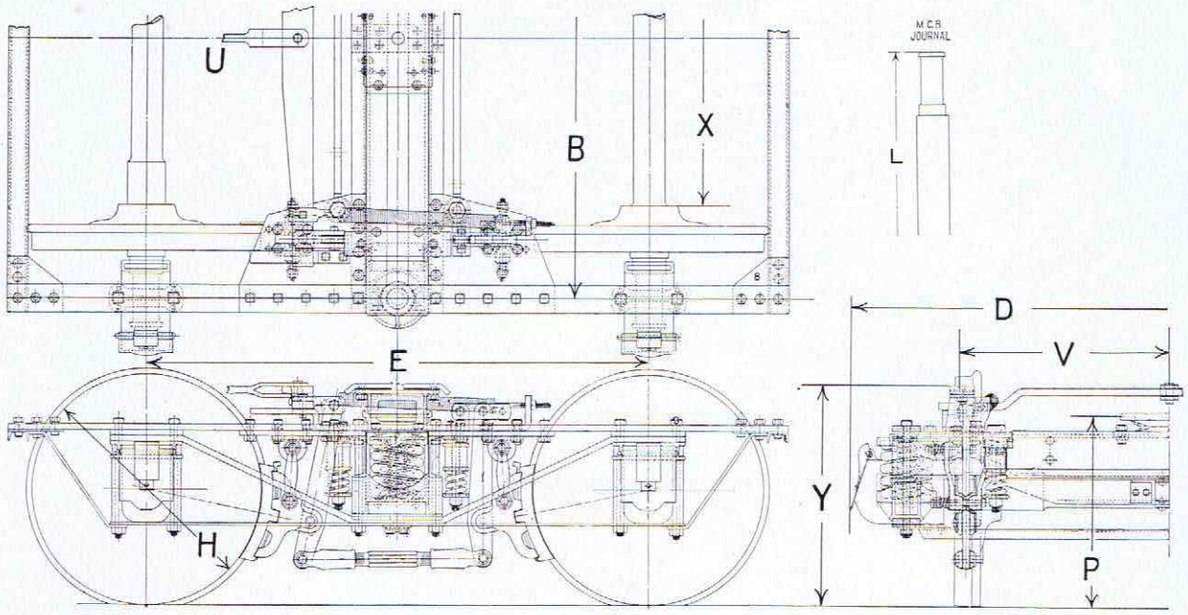
NAMES OF PARTS OF
BRILL No. 50-E TRUCK



1. Side Frame
2. Inverted Arch Bar
3. Inverted Arch Bar Filler
4. Column Bolt
5. Transom
6. Transom Gusset Plate
7. End Frame
8. End Frame Gusset Plate
9. Journal Box Bolt
10. Frame Seat
11. Tie Bar
12. Bolster
13. Body Center Plate
14. Truck Center Plate
15. Side Bearing
16. Side Bearing Wear Plate
17. Bolster Spring
18. Bolster Spring Cap
19. Bolster Spring Seat
20. Motor Suspension Bar
21. Motor Suspension Bar Bolt
22. Motor Suspension Spring (Top)
23. Motor Suspension Spring (Bottom)
24. Motor Suspension Spring Cap (Top)
25. Motor Suspension Spring Cap (Bottom)
26. Motor Suspension Spring Seat (Top)
27. Motor Suspension Spring Seat (Bottom)
28. Brake Rod
29. Radius Bar
30. Radius Bar Guide
31. Radius Bar Clevis
32. Live Lever
33. Brake Turnbuckle End
34. Brake Turnbuckle
35. Dead Lever
36. Dead Lever Adjusting Bar
37. Dead Lever Adjusting Bar Support
38. Brake Release Spring
39. Brake Release Spring Casting (location indicated)
40. Brake Release Spring Hook Bolt
41. Brake Release Spring Nut
42. Brake Release Spring Clip
43. Brake Shoe
44. Brake Head
45. Brake Hanger
46. Journal Box
47. Journal Box Lid
48. Pedestal Brace
49. Center Frame Crossing

BRILL No. 50-E TRUCK

Patented and patents pending in the United States and Foreign Countries



Dimensions of Brill 50-E Trucks

		50-E 1							50-E 2						
	Gage	Metre 3'3⅜"	3'6"	4'0"	4'8½"	5'0"	5'2½"	5'3"	Metre 3'3⅜"	3'6"	4'0"	4'8½"	5'0"	5'2½"	5'3"
B	*Centers of Side Frames	5'0"	5'2½"	5'8½"	6'3"	6'6½"	6'9"	6'9½"	5'1"	5'3½"	5'9½"	6'3"	6'6½"	6'9"	6'9½"
V	Radius of Rub Plates	1'11½"	2'1½"	2'4"	2'6"	2'7¾"	2'9"	2'9¾"	1'11½"	2'1½"	2'4"	2'6"	2'7¾"	2'9"	2'9¾"
L	*Length of Axle (M. C. B. Journal)	5'8¼"	5'10¾"	6'4⅜"	6'11¼"	7'2⅜"	7'5¼"	7'5⅜"	5'10¼"	6'0¾"	6'6¾"	7'0¼"	7'3¾"	7'6¾"	7'6¾"
D	*Width Over All	6'4¾"	6'6¾"	7'0¾"	7'7¼"	7'10¾"	8'1¼"	8'1⅜"	6'7"	6'9½"	7'3½"	7'9"	8'0½"	8'3"	8'3½"
E	Wheel Base	6'0" to 6'6"							6'6"						
H	Wheel Diameter	30"		33"		34"			33"		34"		36"		
P	Distance from Track to Underside of Body Bolster—Car Empty	2'2"		2'3½"		2'4"			2'5"		2'5½"		2'6½"		
Y	Distance (Minimum) from Track to Top of Rub Plates—Car Empty	2'6½"		2'8"		2'8½"			2'9½"		2'10"		2'11"		

		50-E 3							50-E 4						
	Gage	Metre 3'3⅜"	3'6"	4'0"	4'8½"	5'0"	5'2½"	5'3"	Metre 3'3⅜"	3'6"	4'0"	4'8½"	5'0"	5'2½"	5'3"
B	*Centers of Side Frames	5'4"	5'6½"	6'0½"	6'4"	6'7½"	6'10"	6'10½"	5'7"	5'9½"	6'3½"	6'5"	6'8½"	6'11"	6'11½"
V	Radius of Rub Plates	1'11½"	2'1½"	2'4"	2'6"	2'7¾"	2'9"	2'9¾"	1'11½"	2'1½"	2'4"	2'6"	2'7¾"	2'9"	2'9¾"
L	*Length of Axle (M. C. B. Journal)	6'2½"	6'5"	6'11"	7'2½"	7'6"	7'8½"	7'9"	6'6½"	6'9"	7'3"	7'4½"	7'8"	7'10½"	7'11"
D	*Width Over All	6'8¼"	7'1¼"	7'7¼"	7'11¼"	8'2¾"	8'5¼"	8'5⅜"	7'3¼"	7'5¾"	7'11¾"	8'1¼"	8'4⅜"	8'7¼"	8'7¾"
E	Wheel Base	6'6" to 7'0"							7'0" to 8'0"						
H	Wheel Diameter	33"		34"		36"			33"		34"		36"		
P	Distance from Track to Underside of Body Bolster—Car Empty	2'6½"		2'7"		2'8"			2'8"		2'8½"		2'9½"		
Y	Distance (Minimum) from Track to Top of Rub Plates—Car Empty	2'11"		2'11½"		3'0½"			3'0½"		3'1"		3'2"		

* If width of motor does not allow length of wheel hub to equal diameter of wheel bore, these dimensions may be increased.
X Distance between hubs. This is variable to suit motor.
U Truck brakes furnished to this point only.
Contact beam support cast on journal boxes if desired.
King bolt not furnished by truck builders.

The Following Limitations are Recommended

	50-E 1	50-E 2	50-E 3	50-E 4
Maximum Diameter of Journal	3¾"	4¼"	5"	5½"
Weight of Car Body and Equipment with Load—Not to Exceed	46,000 Lbs.	63,000 Lbs.	88,000 Lbs.	120,000 Lbs.
Motors—Not to Exceed	75 H.-P.	125 H.-P.	200 H.-P.	250 H.-P.